

10/577973

SEQUENCE LISTING

AP20 Rec'd PCTO 03 MAY 2006

<110> Ensoli, Barbara
 Caputo, Antonella
 Laus, Michele
 Tondelli, Luisa
 Sparnacci, Katia

<120> Nanoparticles for Delivery of a Pharmacologically Active Agent

<130> 50318/013001

<150> PCT/EP2004/012420

<151> 2004-11-03

<150> GB 0325625.2

<151> 2003-11-03

<160> 40

<170> PatentIn version 3.3

<210> 1

<211> 309

<212> DNA

<213> Human immunodeficiency virus

<220>

<221> CDS

<222> (1) .. (309)

<400> 1

atg gag cca gta gat cct cgt cta gag ccc tgg aag cat cca gga agt	48
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser	
1 5 10 15	

cag cct aaa act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt	96
Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe	
20 25 30	

cat tgc caa gtt tgt ttc ata aca aaa gcc tta ggc atc tcc tac ggc	144
His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly	
35 40 45	

agg aag aag cgg aga cag cgt cga aga cct cct caa ggc agt cag act	192
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr	
50 55 60	

cat caa gtt tct cta tca aag caa ccc acc tcc caa tcc cga ggg gac	240
His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp	
65 70 75 80	

ccg aca ggc ccg aag gaa cag aag aag aag gtg gag aga gag aca gag	288
Pro Thr Gly Pro Lys Glu Gln Lys Lys Lys Val Glu Arg Glu Thr Glu	
85 90 95	

aca gat ccg gtc cat cag tga
 Thr Asp Pro Val His Gln
 100

309

<210> 2
 <211> 102
 <212> PRT
 <213> Human immunodeficiency virus
 <400> 2

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15

Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30

His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
 35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
 50 55 60

His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 65 70 75 80

Pro Thr Gly Pro Lys Glu Gln Lys Lys Lys Val Glu Arg Glu Thr Glu
 85 90 95

Thr Asp Pro Val His Gln
 100

<210> 3
 <211> 261
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1)..(261)

<400> 3
 atg gag cca gta gat cct cgt cta gag ccc tgg aag cat cca gga agt
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15

48

cag cct aaa act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe

96

	20	25	30	
cat tgc caa gtt tgt ttc ata aca aaa gcc tta ggc atc tcc tac ggc				144
His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly				
	35	40	45	
agg aag aag cgg aga cag cgt cga aga cct cct caa ggc agt cag act				192
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr				
	50	55	60	
cat caa gtt tct cta tca aag caa ccc acc tcc caa tcc cga ggg gac				240
His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp				
	65	70	75	80
ccg aca ggc ccg aag gaa tag				261
Pro Thr Gly Pro Lys Glu				
	85			

<210> 4
 <211> 86
 <212> PRT
 <213> Human immunodeficiency virus

<400> 4

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
1 5 10 15

Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
20 25 30

His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
50 55 60

His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
65 70 75 80

Pro Thr Gly Pro Lys Glu
85

<210> 5
 <211> 261
 <212> DNA
 <213> Human immunodeficiency virus

<220>

<221> CDS
 <222> (1)..(261)

<400> 5
 atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt 48
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 cag cct aaa act gct ggt acc aat tgc tat tgt aaa aag tgt tgc ttt 96
 Gln Pro Lys Thr Ala Gly Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 cat tgc caa gtt tgt ttc ata aca aaa gcc tta ggc atc tcc tat ggc 144
 His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
 35 40 45
 agg aag aag cgg aga cag cga cga aga cct cct caa ggc agt cag act 192
 Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
 50 55 60
 cat caa gtt tct cta tca aag cag ccc acc tcc caa tcc cga ggg gac 240
 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 65 70 75 80
 ccg aca ggc ccg aag gaa tag 261
 Pro Thr Gly Pro Lys Glu
 85

<210> 6
 <211> 86
 <212> PRT
 <213> Human immunodeficiency virus

<400> 6
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 Gln Pro Lys Thr Ala Gly Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
 35 40 45
 Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
 50 55 60
 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 65 70 75 80
 Pro Thr Gly Pro Lys Glu

<210> 7
 <211> 261
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1)..(261)

<400> 7
 atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt 48
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 cag cct aaa act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt 96
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 cat tgc caa gtt tgt ttc ata aca gct gcc tta ggc atc tcc tat ggc 144
 His Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly
 35 40 45
 agg aag aag cgg aga cag cga cga aga cct cct caa ggc agt cag act 192
 Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
 50 55 60
 cat caa gtt tct cta tca aag cag ccc acc tcc caa tcc cga ggg gac 240
 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 65 70 75 80
 ccg aca ggc ccg aag gaa tag 261
 Pro Thr Gly Pro Lys Glu
 85

<210> 8
 <211> 86
 <212> PRT
 <213> Human immunodeficiency virus

<400> 8
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 His Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly
 35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
50 55 60

His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
65 70 75 80

Pro Thr Gly Pro Lys Glu
85

<210> 9
<211> 252
<212> DNA
<213> Human immunodeficiency virus

<220>
<221> CDS
<222> (1)..(252)

<400> 9
atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt 48
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
1 5 10 15
cag cct aaa act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt 96
Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
20 25 30
cat tgc caa gtt tgt ttc ata aca aaa gcc tta ggc atc tcc tat ggc 144
His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
35 40 45
agg aag aag cgg aga cag cga cga aga cct cct caa ggc agt cag act 192
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
50 55 60
cat caa gtt tct cta tca aag cag ccc acc tcc caa tcc ccg aca ggc 240
His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Pro Thr Gly
65 70 75 80
ccg aag gaa tag 252
Pro Lys Glu

<210> 10
<211> 83
<212> PRT
<213> Human immunodeficiency virus

<400> 10
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser

1	5	10	15
Gln Pro Lys Thr	Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe		
	20	25	30
His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly			
	35	40	45
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr			
	50	55	60
His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Pro Thr Gly			
65	70	75	80

Pro Lys Glu

<210> 11
 <211> 252
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1)..(252)

<400> 11	
atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt	48
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser	
1 5 10 15	
cag cct aaa act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt	96
Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe	
20 25 30	
cat tgc caa gtt tgt ttc ata aca gct gcc tta ggc atc tcc tat ggc	144
His Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly	
35 40 45	
agg aag aag cgg aga cag cga cga aga cct cct caa ggc agt cag act	192
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr	
50 55 60	
cat caa gtt tct cta tca aag cag ccc acc tcc caa tcc ccg aca ggc	240
His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Pro Thr Gly	
65 70 75 80	
ccg aag gaa tag	252
Pro Lys Glu	

<210> 12
 <211> 83
 <212> PRT
 <213> Human immunodeficiency virus

<400> 12

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15

Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30

His Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly
 35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
 50 55 60

His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Pro Thr Gly
 65 70 75 80

Pro Lys Glu

<210> 13
 <211> 306
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1) .. (306)

<400> 13

atg gat cca gta gat cct aac cta gag ccc tgg aac cat ccg gga agt 48
 Met Asp Pro Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
 1 5 10 15

cag cct aca act gct tgt aac aag tgt tac tgt aaa aag tgt tgc tat 96
 Gln Pro Thr Thr Ala Cys Asn Lys Cys Tyr Cys Lys Lys Cys Cys Tyr
 20 25 30

cat tgc caa gtt tgc ttt ctg aac aaa ggc tta ggc atc tcc tat ggc 144
 His Cys Gln Val Cys Phe Leu Asn Lys Gly Leu Gly Ile Ser Tyr Gly
 35 40 45

agg aag aag cgg aga cag cga cga gga act cct cag agc agt aag gat 192

Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Gly	Thr	Pro	Gln	Ser	Ser	Lys	Asp	
50					55					60						
cat	caa	aat	cct	ata	cca	aag	caa	ccc	ata	ccc	caa	acc	caa	ggg	gtc	240
His	Gln	Asn	Pro	Ile	Pro	Lys	Gln	Pro	Ile	Pro	Gln	Thr	Gln	Gly	Val	
65					70				75					80		
tcg	aca	ggc	ccg	gaa	gaa	tcg	aag	aag	aag	gtg	gag	agc	aag	gca	gag	288
Ser	Thr	Gly	Pro	Glu	Glu	Ser	Lys	Lys	Lys	Val	Glu	Ser	Lys	Ala	Glu	
				85					90					95		
aca	gat	cga	ttc	gat	tag											306
Thr	Asp	Arg	Phe	Asp												
			100													

<210> 14
 <211> 101
 <212> PRT
 <213> Human immunodeficiency virus

<400> 14

Met	Asp	Pro	Val	Asp	Pro	Asn	Leu	Glu	Pro	Trp	Asn	His	Pro	Gly	Ser
1				5					10					15	

Gln	Pro	Thr	Thr	Ala	Cys	Asn	Lys	Cys	Tyr	Cys	Lys	Lys	Cys	Cys	Tyr
			20					25					30		

His	Cys	Gln	Val	Cys	Phe	Leu	Asn	Lys	Gly	Leu	Gly	Ile	Ser	Tyr	Gly
		35					40					45			

Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Gly	Thr	Pro	Gln	Ser	Ser	Lys	Asp
50					55					60					

His	Gln	Asn	Pro	Ile	Pro	Lys	Gln	Pro	Ile	Pro	Gln	Thr	Gln	Gly	Val
65					70				75					80	

Ser	Thr	Gly	Pro	Glu	Glu	Ser	Lys	Lys	Lys	Val	Glu	Ser	Lys	Ala	Glu
				85					90					95	

Thr	Asp	Arg	Phe	Asp
			100	

<210> 15
 <211> 306
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1)..(306)

<400> 15
 atg gag cca gta gat cct aga cta gag ccc tgg aag cat cca gga agt 48
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 cag cct aag act gct tgt acc aat tgc tat tgt aaa aag tgt tgc ttt 96
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 cat tgc caa gtt tgt ttc ata aca aaa ggc tta ggc atc tcc tat ggc 144
 His Cys Gln Val Cys Phe Ile Thr Lys Gly Leu Gly Ile Ser Tyr Gly
 35 40 45
 agg aag aag cgg aga cag cga cga aga gct cct caa gac agt cag act 192
 Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser Gln Thr
 50 55 60
 cat caa gtt tct cta tca aag caa ccc gcc tcc cag ccc cga ggg gac 240
 His Gln Val Ser Leu Ser Lys Gln Pro Ala Ser Gln Pro Arg Gly Asp
 65 70 75 80
 ccg aca ggc ccg aag gaa tcg aag aag aag gtg gag aga gag aca gag 288
 Pro Thr Gly Pro Lys Glu Ser Lys Lys Lys Val Glu Arg Glu Thr Glu
 85 90 95
 aca gat ccg gtc gat tag 306
 Thr Asp Pro Val Asp
 100

<210> 16
 <211> 101
 <212> PRT
 <213> Human immunodeficiency virus

<400> 16
 Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1 5 10 15
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 20 25 30
 His Cys Gln Val Cys Phe Ile Thr Lys Gly Leu Gly Ile Ser Tyr Gly
 35 40 45
 Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser Gln Thr
 50 55 60

His Gln Val Ser Leu Ser Lys Gln Pro Ala Ser Gln Pro Arg Gly Asp
65 70 75 80

Pro Thr Gly Pro Lys Glu Ser Lys Lys Lys Val Glu Arg Glu Thr Glu
85 90 95

Thr Asp Pro Val Asp
100

<210> 17
<211> 306
<212> DNA
<213> Human immunodeficiency virus

<220>
<221> CDS
<222> (1)..(306)

<400> 17
atg gag cca gta gat cct aac cta gag ccc tgg aac cat cca gga agt 48
Met Glu Pro Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
1 5 10 15
cag cct aaa act gct tgt aat aag tgt tat tgt aaa cac tgt agc tat 96
Gln Pro Lys Thr Ala Cys Asn Lys Cys Tyr Cys Lys His Cys Ser Tyr
20 25 30
cat tgt cta gtt tgc ttt cag aca aaa ggc tta ggc att tcc tat ggc 144
His Cys Leu Val Cys Phe Gln Thr Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45
agg aag aag cgg aga cag cga cga agc gct cct cca agc agt gag gat 192
Arg Lys Lys Arg Arg Gln Arg Arg Ser Ala Pro Pro Ser Ser Glu Asp
50 55 60
cat caa aat ctt ata tca aag caa ccc tta ccc caa acc caa ggg gac 240
His Gln Asn Leu Ile Ser Lys Gln Pro Leu Pro Gln Thr Gln Gly Asp
65 70 75 80
ccg aca ggc tcg gaa gaa tcg aag aag aag gtg gag agc aag aca gag 288
Pro Thr Gly Ser Glu Glu Ser Lys Lys Lys Val Glu Ser Lys Thr Glu
85 90 95
aca gat cca ttc gat tag 306
Thr Asp Pro Phe Asp
100

<210> 18
<211> 101
<212> PRT
<213> Human immunodeficiency virus

<400> 18

Met Glu Pro Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
1 5 10 15

Gln Pro Lys Thr Ala Cys Asn Lys Cys Tyr Cys Lys His Cys Ser Tyr
20 25 30

His Cys Leu Val Cys Phe Gln Thr Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Ser Ala Pro Pro Ser Ser Glu Asp
50 55 60

His Gln Asn Leu Ile Ser Lys Gln Pro Leu Pro Gln Thr Gln Gly Asp
65 70 75 80

Pro Thr Gly Ser Glu Glu Ser Lys Lys Lys Val Glu Ser Lys Thr Glu
85 90 95

Thr Asp Pro Phe Asp
100

<210> 19

<211> 261

<212> DNA

<213> Human immunodeficiency virus

<220>

<221> CDS

<222> (1)..(261)

<400> 19

atg gat cca gta gat cct aac cta gag ccc tgg aac cat cca gga agt 48
Met Asp Pro Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
1 5 10 15

cag cct agg act cct tgt aac aag tgt tat tgt aaa aag tgt tgc tat 96
Gln Pro Arg Thr Pro Cys Asn Lys Cys Tyr Cys Lys Lys Cys Cys Tyr
20 25 30

cat tgc caa gtt tgc ttc ata acg aaa ggc tta ggc atc tcc tat ggc 144
His Cys Gln Val Cys Phe Ile Thr Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45

agg aag aag cgg aga cag cga cga aga cct cct caa ggc ggt cag gct 192
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Gly Gln Ala
50 55 60

cat	caa	gat	cct	ata	cca	aag	caa	ccc	tcc	tcc	cag	ccc	cga	ggg	gac	240
His	Gln	Asp	Pro	Ile	Pro	Lys	Gln	Pro	Ser	Ser	Gln	Pro	Arg	Gly	Asp	
65					70					75					80	

ccg	aca	ggc	ccg	aag	gaa	tag	261
Pro	Thr	Gly	Pro	Lys	Glu		
				85			

<210> 20
 <211> 86
 <212> PRT
 <213> Human immunodeficiency virus

<400> 20

Met	Asp	Pro	Val	Asp	Pro	Asn	Leu	Glu	Pro	Trp	Asn	His	Pro	Gly	Ser
1				5					10					15	

Gln	Pro	Arg	Thr	Pro	Cys	Asn	Lys	Cys	Tyr	Cys	Lys	Lys	Cys	Cys	Tyr
			20					25					30		

His	Cys	Gln	Val	Cys	Phe	Ile	Thr	Lys	Gly	Leu	Gly	Ile	Ser	Tyr	Gly
		35					40					45			

Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Gly	Gly	Gln	Ala
	50					55					60				

His	Gln	Asp	Pro	Ile	Pro	Lys	Gln	Pro	Ser	Ser	Gln	Pro	Arg	Gly	Asp
65					70					75					80

Pro	Thr	Gly	Pro	Lys	Glu
				85	

<210> 21
 <211> 306
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1)..(306)

<400>	21																
atg	gaa	cta	gta	gat	cct	aac	tta	gat	ccc	tgg	aac	cat	cca	gga	agc	48	
Met	Glu	Leu	Val	Asp	Pro	Asn	Leu	Asp	Pro	Trp	Asn	His	Pro	Gly	Ser		
1				5					10					15			

cag	cct	aca	act	cct	tgt	acc	aaa	tgc	tat	tgt	aaa	agg	tgt	tgc	ttt	96
Gln	Pro	Thr	Thr	Pro	Cys	Thr	Lys	Cys	Tyr	Cys	Lys	Arg	Cys	Cys	Phe	

	20		25		30	
cat tgc caa tgg tgc ttt aca acg aag ggc tta ggc atc tcc tat ggc						144
His Cys Gln Trp Cys Phe Thr Thr Lys Gly Leu Gly Ile Ser Tyr Gly						
	35		40		45	
agg aag aag cgg aga cag cga cga aga act cct caa agc agt cag ata						192
Arg Lys Lys Arg Arg Gln Arg Arg Arg Thr Pro Gln Ser Ser Gln Ile						
	50		55		60	
cat caa gat cct gta cca aag caa ccc tta tcc caa gcc cga ggg aac						240
His Gln Asp Pro Val Pro Lys Gln Pro Leu Ser Gln Ala Arg Gly Asn						
	65		70		75	80
ccg aca ggc ccg aag gaa tcg aag aag gag gtg gag agc aag gca aag						288
Pro Thr Gly Pro Lys Glu Ser Lys Lys Glu Val Glu Ser Lys Ala Lys						
		85		90		95
aca gat ccg tgc gat tag						306
Thr Asp Pro Cys Asp						
	100					
<210> 22						
<211> 101						
<212> PRT						
<213> Human immunodeficiency virus						
<400> 22						
Met Glu Leu Val Asp Pro Asn Leu Asp Pro Trp Asn His Pro Gly Ser						
1		5		10		15
Gln Pro Thr Thr Pro Cys Thr Lys Cys Tyr Cys Lys Arg Cys Cys Phe						
	20		25		30	
His Cys Gln Trp Cys Phe Thr Thr Lys Gly Leu Gly Ile Ser Tyr Gly						
	35		40		45	
Arg Lys Lys Arg Arg Gln Arg Arg Arg Thr Pro Gln Ser Ser Gln Ile						
	50		55		60	
His Gln Asp Pro Val Pro Lys Gln Pro Leu Ser Gln Ala Arg Gly Asn						
	65		70		75	80
Pro Thr Gly Pro Lys Glu Ser Lys Lys Glu Val Glu Ser Lys Ala Lys						
	85		90		95	
Thr Asp Pro Cys Asp						
	100					

<210> 23
 <211> 306
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1)..(306)

<400> 23
 atg gac ccg gta gat cct aac cta gag ccc tgg aat cat ccg ggg agt 48
 Met Asp Pro Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
 1 5 10 15
 cag cct aaa act ccc tgt aac aaa tgt tat tgt aaa atg tgt tgc tgg 96
 Gln Pro Lys Thr Pro Cys Asn Lys Cys Tyr Cys Lys Met Cys Cys Trp
 20 25 30
 cat tgt caa gtt tgc ttt ctg aac aaa ggc tta ggc atc tcc tat ggc 144
 His Cys Gln Val Cys Phe Leu Asn Lys Gly Leu Gly Ile Ser Tyr Gly
 35 40 45
 agg aag aag cgg aag cac cga cga gga act cct cag agc agt aag gat 192
 Arg Lys Lys Arg Lys His Arg Arg Gly Thr Pro Gln Ser Ser Lys Asp
 50 55 60
 cat caa aat cct gta cca aag caa ccc tta ccc acc acc aga ggg aac 240
 His Gln Asn Pro Val Pro Lys Gln Pro Leu Pro Thr Thr Arg Gly Asn
 65 70 75 80
 ccg aca ggc ccg aag gaa tcg aag aag gag gtg gag agc aag aca gag 288
 Pro Thr Gly Pro Lys Glu Ser Lys Lys Glu Val Glu Ser Lys Thr Glu
 85 90 95
 aca gat cca ttc gat tag 306
 Thr Asp Pro Phe Asp
 100

<210> 24
 <211> 101
 <212> PRT
 <213> Human immunodeficiency virus

<400> 24
 Met Asp Pro Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
 1 5 10 15
 Gln Pro Lys Thr Pro Cys Asn Lys Cys Tyr Cys Lys Met Cys Cys Trp
 20 25 30
 His Cys Gln Val Cys Phe Leu Asn Lys Gly Leu Gly Ile Ser Tyr Gly

35 40 45
 Arg Lys Lys Arg Lys His Arg Arg Gly Thr Pro Gln Ser Ser Lys Asp
 50 55 60
 His Gln Asn Pro Val Pro Lys Gln Pro Leu Pro Thr Thr Arg Gly Asn
 65 70 75 80
 Pro Thr Gly Pro Lys Glu Ser Lys Lys Glu Val Glu Ser Lys Thr Glu
 85 90 95
 Thr Asp Pro Phe Asp
 100

<210> 25
 <211> 261
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1)..(261)

<400> 25
 atg gac cca gta gat cct aac caa gag ccc tgg aac cat cca gga agt 48
 Met Asp Pro Val Asp Pro Asn Gln Glu Pro Trp Asn His Pro Gly Ser
 1 5 10 15
 cag cct aaa act gct tgt aac aat tgt tat tgt aaa aag tgc tgc tat 96
 Gln Pro Lys Thr Ala Cys Asn Asn Cys Tyr Cys Lys Lys Cys Cys Tyr
 20 25 30
 cat tgc caa ttg tgc ttt tta aag aaa ggc tta ggc att tcc tat ggc 144
 His Cys Gln Leu Cys Phe Leu Lys Gly Leu Gly Ile Ser Tyr Gly
 35 40 45
 agg aag aag cgg agc cag cga cga gga act cct gca agt ttg caa gat 192
 Arg Lys Lys Arg Ser Gln Arg Arg Gly Thr Pro Ala Ser Leu Gln Asp
 50 55 60
 cat caa aat cct ata cca aag caa ccc tta tcc cga acc cgc ggg gac 240
 His Gln Asn Pro Ile Pro Lys Gln Pro Leu Ser Arg Thr Arg Gly Asp
 65 70 75 80
 ccg aca ggc ccg aag gaa tag 261
 Pro Thr Gly Pro Lys Glu
 85

<210> 26
 <211> 86

<212> PRT
 <213> Human immunodeficiency virus

<400> 26

Met Asp Pro Val Asp Pro Asn Gln Glu Pro Trp Asn His Pro Gly Ser
 1 5 10 15

Gln Pro Lys Thr Ala Cys Asn Asn Cys Tyr Cys Lys Lys Cys Cys Tyr
 20 25 30

His Cys Gln Leu Cys Phe Leu Lys Lys Gly Leu Gly Ile Ser Tyr Gly
 35 40 45

Arg Lys Lys Arg Ser Gln Arg Arg Gly Thr Pro Ala Ser Leu Gln Asp
 50 55 60

His Gln Asn Pro Ile Pro Lys Gln Pro Leu Ser Arg Thr Arg Gly Asp
 65 70 75 80

Pro Thr Gly Pro Lys Glu
 85

<210> 27
 <211> 306
 <212> DNA
 <213> Human immunodeficiency virus

<220>
 <221> CDS
 <222> (1)..(306)

<400> 27

atg gag ctg gta gat cct aac cta gag ccc tgg aat cat ccg gga agt 48
 Met Glu Leu Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
 1 5 10 15

cag cct aca act gct tgt agc aag tgt tac tgt aaa ata tgt tgc tgg 96
 Gln Pro Thr Thr Ala Cys Ser Lys Cys Tyr Cys Lys Ile Cys Cys Trp
 20 25 30

cat tgc caa cta tgc ttt ctg aaa aaa ggc tta ggc atc tcc tat ggc 144
 His Cys Gln Leu Cys Phe Leu Lys Lys Gly Leu Gly Ile Ser Tyr Gly
 35 40 45

agg aag aag cgg aag cac cga cga gga act cct cag agc agt aag gat 192
 Arg Lys Lys Arg Lys His Arg Arg Gly Thr Pro Gln Ser Ser Lys Asp
 50 55 60

cat caa aat cct ata cca gag caa ccc cta ccc atc atc aga ggg aac 240

His Gln Asn Pro Ile Pro Glu Gln Pro Leu Pro Ile Ile Arg Gly Asn
65 70 75 80

ccg aca gac ccg aaa gaa tcg aag aag gag gtg gcg agc aag gca gag 288
Pro Thr Asp Pro Lys Glu Ser Lys Lys Glu Val Ala Ser Lys Ala Glu
85 90 95

aca gat ccg tgc gat tag 306
Thr Asp Pro Cys Asp
100

<210> 28
<211> 101
<212> PRT
<213> Human immunodeficiency virus

<400> 28

Met Glu Leu Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
1 5 10 15

Gln Pro Thr Thr Ala Cys Ser Lys Cys Tyr Cys Lys Ile Cys Cys Trp
20 25 30

His Cys Gln Leu Cys Phe Leu Lys Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45

Arg Lys Lys Arg Lys His Arg Arg Gly Thr Pro Gln Ser Ser Lys Asp
50 55 60

His Gln Asn Pro Ile Pro Glu Gln Pro Leu Pro Ile Ile Arg Gly Asn
65 70 75 80

Pro Thr Asp Pro Lys Glu Ser Lys Lys Glu Val Ala Ser Lys Ala Glu
85 90 95

Thr Asp Pro Cys Asp
100

<210> 29
<211> 306
<212> DNA
<213> Human immunodeficiency virus

<220>
<221> CDS
<222> (1) .. (306)

<400> 29
atg gag ccg gta gat cct agc cta gag ccc tgg aac cac ccg gga agt 48
Met Glu Pro Val Asp Pro Ser Leu Glu Pro Trp Asn His Pro Gly Ser
1 5 10 15
cag cct aca act gct tgt agc aat tgt tac tgt aaa atg tgc tgc tgg 96
Gln Pro Thr Thr Ala Cys Ser Asn Cys Tyr Cys Lys Met Cys Cys Trp
20 25 30
cat tgc caa ttg tgc ttt ctg aac aag ggc tta ggc atc tcc tat ggc 144
His Cys Gln Leu Cys Phe Leu Asn Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45
agg aag aag cgg aga cgc cga cga gga act cct cag agc cgt cag gat 192
Arg Lys Lys Arg Arg Arg Arg Arg Gly Thr Pro Gln Ser Arg Gln Asp
50 55 60
cat caa aat cct gta cca aag caa ccc tta ccc acc acc aga ggg aac 240
His Gln Asn Pro Val Pro Lys Gln Pro Leu Pro Thr Thr Arg Gly Asn
65 70 75 80
ccg aca ggc ccg aaa gaa tcg aag aag gag gtg gcg agc aag aca gag 288
Pro Thr Gly Pro Lys Glu Ser Lys Lys Glu Val Ala Ser Lys Thr Glu
85 90 95
aca gat ccg tgc gat tag 306
Thr Asp Pro Cys Asp
100

<210> 30
<211> 101
<212> PRT
<213> Human immunodeficiency virus

<400> 30
Met Glu Pro Val Asp Pro Ser Leu Glu Pro Trp Asn His Pro Gly Ser
1 5 10 15
Gln Pro Thr Thr Ala Cys Ser Asn Cys Tyr Cys Lys Met Cys Cys Trp
20 25 30
His Cys Gln Leu Cys Phe Leu Asn Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45
Arg Lys Lys Arg Arg Arg Arg Arg Gly Thr Pro Gln Ser Arg Gln Asp
50 55 60
His Gln Asn Pro Val Pro Lys Gln Pro Leu Pro Thr Thr Arg Gly Asn
65 70 75 80

Pro Thr Gly Pro Lys Glu Ser Lys Lys Glu Val Ala Ser Lys Thr Glu
85 90 95

Thr Asp Pro Cys Asp
100

<210> 31
<211> 348
<212> DNA
<213> Human immunodeficiency virus

<220>
<221> CDS
<222> (1)..(348)

<400> 31
atg gat cca gta gat cct gag atg ccc cct tgg cat cac cct gga agt 48
Met Asp Pro Val Asp Pro Glu Met Pro Pro Trp His His Pro Gly Ser
1 5 10 15
cag ccc cag acc cct tgt aat aag tgc tat tgc aaa aga tgc tgc tat 96
Gln Pro Gln Thr Pro Cys Asn Lys Cys Tyr Cys Lys Arg Cys Cys Tyr
20 25 30
cat tgc tat gtt tgt ttt gca agc aag ggt ttg gga atc tcc tat ggc 144
His Cys Tyr Val Cys Phe Ala Ser Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45
agg aag aag cga cgg aga cca gcc gct gct gcg agc cat cca gat aat 192
Arg Lys Lys Arg Arg Arg Pro Ala Ala Ala Ala Ser His Pro Asp Asn
50 55 60
caa gat cct gta cca gag caa ccc cca tcc atc acc aac agg aag cag 240
Gln Asp Pro Val Pro Glu Gln Pro Pro Ser Ile Thr Asn Arg Lys Gln
65 70 75 80
aaa cgc cag gag gaa cag gag aag gag gtg gag aag gag aca ggc cca 288
Lys Arg Gln Glu Glu Gln Glu Lys Glu Val Glu Lys Glu Thr Gly Pro
85 90 95
ggt gga tac cct cgc cgc aag gat tct tgc cac tgt tgt aca cgg acc 336
Gly Gly Tyr Pro Arg Arg Lys Asp Ser Cys His Cys Cys Thr Arg Thr
100 105 110
tca gga caa taa 348
Ser Gly Gln
115

<210> 32
<211> 115
<212> PRT
<213> Human immunodeficiency virus

<400> 32

Met Asp Pro Val Asp Pro Glu Met Pro Pro Trp His His Pro Gly Ser
1 5 10 15

Gln Pro Gln Thr Pro Cys Asn Lys Cys Tyr Cys Lys Arg Cys Cys Tyr
20 25 30

His Cys Tyr Val Cys Phe Ala Ser Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45

Arg Lys Lys Arg Arg Arg Pro Ala Ala Ala Ala Ser His Pro Asp Asn
50 55 60

Gln Asp Pro Val Pro Glu Gln Pro Pro Ser Ile Thr Asn Arg Lys Gln
65 70 75 80

Lys Arg Gln Glu Glu Gln Glu Lys Glu Val Glu Lys Glu Thr Gly Pro
85 90 95

Gly Gly Tyr Pro Arg Arg Lys Asp Ser Cys His Cys Cys Thr Arg Thr
100 105 110

Ser Gly Gln
115

<210> 33

<211> 20

<212> PRT

<213> Human immunodeficiency virus

<400> 33

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
1 5 10 15

Gln Pro Lys Thr
20

<210> 34

<211> 20

<212> PRT

<213> Human immunodeficiency virus

<400> 34

Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe His Cys Gln Val

1 5 10 15

Cys Phe Ile Thr
20

<210> 35
<211> 15
<212> PRT
<213> Human immunodeficiency virus

<400> 35

Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly Arg Lys
1 5 10 15

<210> 36
<211> 15
<212> PRT
<213> Human immunodeficiency virus

<400> 36

Ser Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln
1 5 10 15

<210> 37
<211> 15
<212> PRT
<213> Human immunodeficiency virus

<400> 37

Arg Arg Pro Pro Gln Gly Ser Gln Thr His Gln Val Ser Leu Ser
1 5 10 15

<210> 38
<211> 21
<212> PRT
<213> Human immunodeficiency virus

<400> 38

Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His Gln Val
1 5 10 15

Ser Leu Ser Lys Gln
20

<210> 39
<211> 16

<212> PRT
<213> Human immunodeficiency virus

<400> 39

His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
1 5 10 15

<210> 40
<211> 14
<212> PRT
<213> Human immunodeficiency virus

<400> 40

Pro Thr Ser Gln Ser Arg Gly Asp Pro Thr Gly Pro Lys Glu
1 5 10